

ROD PUMP CONTROL SYSTEM INCLUDING PARAMETER ESTIMATOR

ABSTRACT OF THE DISCLOSURE

5 A rod pump control system includes a parameter
estimator that determines from motor data parameters
relating to operation of the rod pump and/or downhole
dynamometer card without the need for external
instrumentation, such as down hole sensors, rod load
sensors, flow sensors, acoustic fluid level sensors, etc.
10 In one embodiment, instantaneous motor current and
voltage together with pump parameters are used in
determining rod position and load. The rod position and
load are used to control the operation of the rod pump to
optimize the operation of the pump. Also disclosed in a
15 pump stroke amplifier that is capable of increasing pump
stroke without changing the overall pumping speed, or in
the alternative, maintaining the well output with
decreased overall pumping speed.